

record of conception of an invention prior to that date and also describes experiments which show that the invention was reduced to practice prior to that date.

The document entitled "Request for Patent Action" describes an idea for a process for converting a first olefin having X carbon atoms to a second olefin having X + 1 carbon atoms, which process comprises a hydroformylation stage wherein the first olefin is reacted with carbon monoxide and hydrogen in the presence of a hydroformylating catalyst to form the corresponding alcohol, followed by a dehydration stage wherein the alcohol is dehydrated in the presence of a dehydration catalyst to form the second olefin. This is the concept which is claimed in the present invention.

The document entitled "Dehydration of SHF-Alcohols to Alpha-Olefins" describes experimental work wherein a primary alcohol, i.e., pure (99%) 1-decanol, and industrially produced primary alcohol mixtures, such as NEODOL-1 alcohol (which is largely linear 1-undecanol) or Linevol-911 (a mixture of C₉, C₁₀, and C₁₁ 1-alcohols), made by hydroformylation of a C₁₀ olefin or a mixture of C₈, C₉, and C₁₀ olefins were subjected to dehydration in a continuous reactor in the gas phase and that 1-decene, 1-undecene or a mixture of 1-nonene, 1-decene and 1-undecene, respectively, were the predominant products. The document explains that the dehydration of the alcohols to olefins was carried out in several different experiments to a selectivity of over 90 percent.

The invention claimed herein is a process wherein a starting olefinic compound is subjected to hydroformylation to produce an aldehyde and/or an alcohol with an increased carbon chain length. As stated in the Declaration, this step was carried out prior to the experiments described in the second document. The next step involves subjecting the alcohol with the increased carbon chain length to dehydration to produce an olefinic compound with an increased carbon chain length compared to the starting olefinic compound. In the experiments described in the second document, the 1-decene and mixture of C₉, C₁₀, and C₁₁ alcohols were dehydrated to produce 1-undecene and a mixture of 1-nonene, 1-decene and 1-undecene, respectively. Therefore, the Applicant asserts that the Declaration and accompanying documents prove that the invention described in the present claims was made prior to the priority date of the world patent application and that the world patent application should be removed as a reference against this application (and also its US equivalent, US 2005/0065389).

As described above, the present invention is a process for increasing the carbon chain length of an olefinic compound. It is a process which starts with an olefin and ends up with an olefin with one more carbon atom in the chain. Neither Bolinger nor Kaizik et al. describe a process for increasing the carbon chain length of an olefin. Neither of these references suggests

a process for increasing the carbon chain length of an olefin. There is simply nothing in either one of these references that relates to the subject matter of the claims of the present invention.


Bolinger describes a process for hydroformylation of an olefin by reacting it with carbon monoxide in hydrogen to produce an alcohol. Aldehydes or esters may also be formed. These are the end products of the process of the reference.

Kaizik et al. describe a multi stage synthesis for preparing 1-olefins from aldehydes. The aldehyde is condensed with acetone to form an unsaturated ketone. The unsaturated ketone is hydrogenated to yield a saturated alcohol. The saturated alcohol is dehydrated to produce a 1-olefin. Aldehydes are the starting material for the process of this invention, not olefins. In fact, the reference describes an alternative process for making 1-olefins which involves other olefins. That process is described at column 1, lines 34-39 and involves dehydration of straight chain paraffins to form internal olefins which are then converted into 1-olefins by cross metathesis. This reference teaches away from a process of making olefins from other olefins by describing the disadvantage of the dehydration/cross metathesis process which is that a large number of different 1-olefins is produced. Thus, one of ordinary skill in the art would not be led to combine Kaizik et al. with Bolinger.

For the reasons discussed above, the Applicant asserts that the rejections have been overcome. An early notice of allowance is respectfully requested.

Respectfully submitted,

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